

Appl. No. 10/712,967
Amdt dated October , 2006
Reply to Office Action of May 26, 2006
Att. Docket No.: 1279-291N1

Filing date: November 14, 2003
Applicant Name: Timothy J. Deming
Examiner: David Lukton
Art Unit: 1654

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Amendments to the Specifications

Please replace paragraph [0024] with the following amended paragraph:

[0024] Another embodiment of the invention disclosed herein entails a method of polymerizing aminoacid-N-carboxyanhydride monomers by combining a NCA monomer with an initiator molecule complex comprised of a low valent transition metal-Lewis Base ligand. A specific embodiment of the invention disclosed herein entails a method of polymerizing aminoacid-N-carboxyanhydride monomers having a ring with a O-C₃ and a O-C₂ anhydride bond which consists of combining a first NCA monomer with an initiator molecule complex comprised of a low valent metal capable of undergoing an oxidative addition reaction wherein the oxidative addition reaction formally increases the oxidation state by two electrons; and an electron donor comprising a Lewis base. The initiator molecule is then allowed to open the ring of the first NCA through oxidative addition across either the O-C₃ or O-C₂ anhydride bond and then combine with a second NCA monomer, to form an amido-containing metallacycle. A third NCA monomer is then allowed to combine with the amido containing ~~metallaeyle~~ metallacycle so that the amido nitrogen of the amido containing ~~metallaeyle~~ metallacycle attacks the carbonyl carbon of the NCA. Thus, the NCA is added to the polyaminoacid chain and the amido containing ~~metallaeyle~~ metallacycle is regenerated for further polymerization. In a preferred embodiment of the invention, the efficiency of the initiator is controlled by allowing the reaction to proceed in a solvent selected for its ability to influence the reaction. In a specific embodiment of the invention, the solvent is selected from the group consisting of ethyl acetate, toluene, dioxane, acetonitrile, THF and DMF.

Please replace paragraph [00101] with the following amended paragraph:

[00101] Another embodiment of the invention disclosed herein entails a method of polymerizing aminoacid-N-carboxyanhydride monomers by combining a NCA monomer with an initiator molecule complex comprised of a low valent transition metal-Lewis Base ligand. A specific embodiment of the invention disclosed herein entails a method

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of polymerizing aminoacid-N-carboxyanhydride monomers having a ring with a O-C₅ and a O-C₂ anhydride bond. The method consists of combining a first NCA monomer with an initiator molecule complex. The complex is comprised of a low valent metal capable of undergoing an oxidative addition reaction, wherein the oxidative addition reaction formally increases the oxidation state by two electrons, and an electron donor comprising a Lewis base. The initiator molecule opens the ring of the first NCA through oxidative addition across either the O-C₅ or O-C₂ anhydride bond and combines with a second NCA monomer to form an amido containing metallacycle. A third NCA monomer then combines with the amido containing ~~metalla~~metallacycle so that the amido nitrogen of the amido containing ~~metalla~~metallacycle attacks the carbonyl carbon of the NCA. The NCA is then added to the polyaminoacid chain, and the amido containing ~~metalla~~metallacycle is regenerated for further polymerization.